

ABSTRACT OF THE DISCLOSURE

A water treatment reactor adapted to simultaneously carry out electrocoagulation and advanced oxidation processes is disclosed, which includes an upright sealed tank having a metal body, or a metal mounted on 5 an inner wall thereof, used as a cathode; a sacrificial electrode used as an anode, which is disposed in the tank and non-electrically connected to the cathode; a mixing device disposed in the bottom of the tank for enabling mixing of influent water and an air or oxygen-containing gas introduced into the tank; a gas-liquid separator which is in fluid communication with 10 the tank at the top for expelling a gas from the tank without expelling water; and a direct current supply having a positive electrode electrically connected to the anode and a negative electrode electrically connected to the cathode.